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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,794	11/13/2001	Gerard Howard Davies	ACO2694PIUS	9499

7590

10/11/2002

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EXAMINER

BARR, MICHAEL E

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 10/11/2002

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/936,794

Applicant(s)

DAVIES ET AL.

Examiner

Michael Barr

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37

CFR 1.72(b). An abstract on a separate sheet is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 cites the limitation that the components are “thoroughly mixed”. “Thoroughly” is a relative that renders the claim vague and indefinite, as there is no clear definition provided to show what degree of mixing is considered to be thorough.

Claim 7 cites the limitation that the components are mixed “shortly before application”. “Shortly” is a relative that renders the claim vague and indefinite, as there is no clear definition provided to show what time frame is considered to shortly before application.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 7-8, 10, and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano et al.

Sano et al. teaches coating steel with an aqueous alkali metal silicate composition, having the claimed $\text{SiO}_2/\text{M}_2\text{O}$ molar ratio, allowing the coated steel to touch dry, and then spraying the coated steel with a film strengthening/harden solution containing an inorganic salt or silicate (Col. 3, line 61-Col. 5, line 27). The concentrations of the inorganic salt or silicate in the film strengthening/hardening solution taught by Sano et al. fall within the claimed molarity range (Col. 5, lines 19-53). Although Sano et al. does not specifically teach this coating as a primer, this is merely the intended use of the claimed process and does not effect the patentability of the claimed process. The preparation and mixing of the components of the alkali metal silicate coating solution taught by Sano et al. reads on the limitations of Claim 7, as the degree of mixing and time before application are relative parameters.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al.

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Sano et al. is applied here for the same reasons as given above. Sano et al. does not teach that the mole ratio of $\text{SiO}_2/\text{M}_2\text{O}$ is 25:1. However, Sano et al. does teach that the mole ratio of $\text{SiO}_2/\text{M}_2\text{O}$ determines the viscosity of the coating solution (Col. 4, lines 51-55). This shows that the mole ratio of $\text{SiO}_2/\text{M}_2\text{O}$ is a result effective variable and as such, it is considered obvious and within the ordinary skill of the art to optimize and determine workable ranges of such a variable parameter, through routine experimentation (*In re Boesch* 205 USPQ 215). Therefore, it is the examiner's position that the claimed $\text{SiO}_2/\text{M}_2\text{O}$ mole ratio would have been obvious to one skilled in the art practicing Sano et al., through such routine experimentation. Furthermore, concentration limitations are considered obvious absent a showing of a criticality (*Akzo vs. E.I. du Pont de Nemours* 1 USPQ 2d 1704).

Sano et al. also does not teach the applied density of the film strengthening/hardening solution to the coated steel, as claimed in Claim 9. However, such a limitation is directly indicative of the amount of solution applied and such an amount clearly is a result effective variable, as too little solution would not provide the desired hardening of the silicate coating in Sano et al. Therefore, as indicated above, it is considered obvious and within the ordinary skill of the art to optimize and determine workable ranges of such a variable parameter, through routine experimentation (*In re Boesch* 205 USPQ 215). Therefore, it is the examiner's position that the claimed applied density of the solution to the coated steel, as in Claim 9, would have been obvious to one skilled in the art practicing Sano et al., through such routine experimentation.

Sano et al. does not teach that the coating, drying, and treatment solution are performed in an on-line process. However, the performance of a process in a continuous on-line manner is

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considered obvious in the art (*In re Dilnot* 138 USPQ 248), and thus would have been obvious to do so in Sano et al., with the expectation of achieving the desired treated steel.

Sano et al. suggests that the silicate solution applied to the steel may or may not be dried by heating (Col. 5, lines 15-17). The teaching of Sano et al. suggests that the drying of the silicate coating can be achieved under room temperature conditions, which would fall in the claimed range). Sano et al. does not teach that the drying occur using forced air flow. However, it is well established in the art to use forced air to aid and expedite drying, and would have been obvious to one skilled in the art to do so in Sano et al., in order to aid and expedite the drying of the silicate coating.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. as applied to claim 1 above, and further in view of Plueddemann.

Sano et al. does not teaches stabilizing the alkali metal silicate solution in the claimed manner. Plueddemann teaches stabilizing an alkali metal silicate solution with an substituted siliconate, formed and made neutral by ion exchanging (Cols. 9-10). The stabilizing of Plueddemann reads on the claimed stabilizing of Claim 4. It would have been obvious to one skilled in the art to provide the alkali metal silicate solution of Sano et al. with stabilization, in the manner taught by Plueddemann, in order to provide a stable silicate solution, since such solution stabilization is well known in the art in order to ensure a stable and useful solution with a significant self-life.

9. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. as applied to claim 1 above, and further in view of van der Kolk et al.

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Sano et al. fails to teach that the silicate coating contains a zinc powder and organic resin. However, such additive are typical for silicate coatings for steel and ferrous substrate, especially the zinc, as the zinc is a known anticorrosive agent. Van der Kolk et al. teaches coating steel with a protective silicate coating, which further contains zinc powder as an anticorrosive agent and an organic resin material as a thickening agent (Col. 4, lines 16-30; Col. 4, line 67-Col. 5, line 2). It would have been obvious to one skilled in the art to add zinc powder and organic resin to the silicate coating material of Sano et al., with the expectation of providing the expected anticorrosive benefits and thickening, as is typical for such silicate coating solutions, as shown by van der Kolk et al.

Conclusion

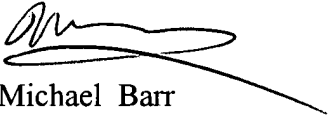
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fisher, Jr., Munger et al., and Shodai et al. teach treating/curing/hardening silicate coatings by further contact with a treatment solution.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Barr whose telephone number is 703-305-7919. The examiner can normally be reached on Monday-Thursday 6:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 or 703-305-5408 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Michael Barr
Primary Examiner
Art Unit 1762

MB
October 9, 2002